INTEGRATED DISBURSING AND ACCOUNTING (IDA), ITS DEVELOPMENT AND IMPLEMENTATION

Michael Robert Cooper

NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

INTEGRATED DISBURSING AND ACCOUNTING (IDA), ITS DEVELOPMENT AND IMPLEMENTATION

by

Michael Robert Cooper

and

Joseph Sharp Littleton, III

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Thesis Advisor: J. F. Owens

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This thesis describes the development and implementation of the Department of the Navy's Integrated Accounting and Disbursing (IDA) system. The pre-IDA accounting and disbursing systems are presented and their shortcomings are identified. The progress of IDA is traced from its conceptual foundation through the detail design stage. Various forces which significantly influenced the final design have been identified. Overall IDA implementation

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by

Michael Robert Cooper
Lieutenant, United States Navy
B.A., University of Washington, 1972

and

Joseph Sharp Littleton, III
Lieutenant, United States Navy
B.S., University of Virginia, 1972

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September 1978

ABSTRACT

This thesis describes the development and implementation of the Department of the Navy's Integrated Disbursing and Accounting (IDA) system. The pre-IDA disbursing and accounting systems are presented and their shortcomings are identified. The progress of IDA is traced from its conceptual foundation through the detail design stage. Various forces which significantly influenced the final design have been identified. Overall IDA implementation to date is examined along with a detailed view of implementation efforts in the San Diego area.

TABLE OF CONTENTS

LIST OF FIGURES

I. INTRODUCTION

The Department of the Navy's Integrated Disbursing and Accounting (IDA) system represents one relatively small portion of the overall Navy Financial Management Improvement Program (FMIP). However, in terms of scope and required action, IDA is a major undertaking which will last about ten years from concept definition to final implementation. Major expenditures for data processing equipment, personnel retraining, system design and management implementation efforts are involved. Cost benefit studies estimate a cumulative net savings of approximately thirty million dollars over the ten year period 1978-1987 attributable primarily to a decrease in personnel requirements. In addition, IDA is capable of providing a substantial improvement in timeliness and accuracy of financial information for all levels of command.

This thesis describes the development and implementation of IDA to date. The pre-IDA accounting and disbursing systems are examined and shortcomings are identified. The progress of IDA is traced from its conceptual foundations through the detailed design stage and the various forces and events which affected the design are described.

The implementation of IDA is presented with specific emphasis on system functional operations, the time phased implementation plan and the required activity reorganizations. A closer view of implementation efforts in the San Diego naval complex is included and specific implementation techniques are discussed.

Much of this thesis is based on open source literature and personal interviews with individuals who are now, or were at some time, involved in the design or implementation of project IDA. The views and conclusions contained herein are those solely of the authors and should not be interpreted as representing the official views or policies, either expressed or implied, of the Department of the Navy or any naval command referred to within this document.

Administratively, footnotes and references within the text have been handled in a somewhat modified manner which may require comment. In those cases where acknowledgement for ideas or direct quotations is required, the section will be followed by an entry similar to the following: [6, p43]. The first numeral indicates the number of the reference which can be located in the List of References immediately following the text of the thesis. The second entry indicates the appropriate page number within the reference where the idea or quotation appears.

II. PRESENT ACCOUNTING AND DISBURSING SYSTEMS

A. GENERAL

In order to fully appreciate the Navy's new Integrated Disbursing and Accounting (IDA) System, it is necessary to discuss the present accounting and disbursing system. This includes both the strengths and weaknesses of the current system. With an appreciation of the present system and how it functions, an understanding of the intent of IDA and the problems it is designed to eliminate is enhanced.

B. ACCOUNTING OVERVIEW

One definition of accounting is as follows: "Accounting is the art of recording, classifying, and summarizing in a significant manner and in terms of money, transactions and events which are, in part at least, of a financial character, and interpreting the results thereof." [1, p9]

Although this short definition highlights the essence of accounting procedures -- the recording, classifying, summarizing, and interpreting of financial information -- it fails to point out why accounting is done and for whom it is done. These two points are just as significant if not more so than the previously mentioned procedures. The essence of these two points is that accounting must not be viewed as an end in itself, but rather as a tool for accomplishing organizational objectives. Therefore, accounting is a service activity whose function is to provide quantitative information, primarily financial in nature,

about specific economic entities, which is intended to be useful in making economic decisions. Accounting is a means of communicating this quantitative information to those who have an interest in interpreting and applying this information. In the private sector these users vary from management or owners to investors and regulatory agencies. Their needs and expectations determine the type of information required of the accounting system. Accounting provides the information that can be useful in evaluating management effectiveness in fulfilling its stewardship role and other managerial responsibilities.

Financial statements are the means by which information accumulated and processed is periodically communicated to the users of the information. Therefore, they have to be designed to serve the needs of a variety of users, particularly owners and creditors.

C. GOVERNMENTAL ACCOUNTING

In the public sector, the various users are not concerned with a profit or loss in a business sense. However, they are extremely concerned with ensuring that maximum benefit is received for every dollar spent and that suitable control is maintained over expenditures. Where the private sector attempts to maximize profits, the public sector attempts to maximize benefits received for a given level of expenditures. Even though the focus or objectives are different, accounting still plays a significant role in reporting on the results of

operations and ensuring that various laws and directives are complied with properly. Accounting is also concerned with providing information that is accurate and timely.

Accounting in the Federal Government is designed to provide financial information for a variety of users, such as the management of a particular agency, the Department of the Treasury, the Office of Management and Budget, the United States Congress and the American public. This financial information is used to:

*Facilitate efficient management

*Support budget requests

*Show the extent of compliance with legal provisions

*Report (in financial terms) to other agencies, to the Congress and to the public, the status and results of the agency's activities.

All of the above are considered when evaluating the efficiency of an accounting system of any governmental agency.

D. THE NAVY'S ACCOUNTING SYSTEM

The basis of the Navy's present accounting system can be traced to the Budget and Accounting Act of 1921. This legislation established the General Accounting Office (GAO) headed by the Comptroller General of the United States. The Comptroller General was given the responsibility for developing governmental accounting systems. He was also given the authority to make expenditure analysis; maintain ledger accounts; investigate receipts, disbursement, and application of public funds; examine books, documents, papers and records of financial

transactions; and perform audits as necessary. The Navy accounting system is open to GAO review and has continually received the Comptroller General's approval during such examinations. With the exception of some accounting procedures utilized for the operating forces and the general extent of automation within the system, the Navy accounting system is very similar to those of the other armed services.

Accounting, as it has evolved in the Navy, has three major purposes. They are as follows:

*To report the use of funds under the various appropriations granted to the Navy by Congress;

*To control the obligations and expenditures of funds and thus to prevent their exceeding the limitations imposed by Congress (and those established by fund administrators at various levels); and

*To provide analysis of the costs of maintenance and operations, construction, and procurement. [2, p177]

In addition, established Navy accounting procedures have the following specific goals:

*To maintain consistency between fund administration and budgeting processes;

*To provide timely accounting information for management review and to meet the requirements of statutes;

*To maintain adequate accounting controls of total resources, distinguishing between funded and unfunded availability;

*To provide adequate controls over commitments and obligations both incurred and outstanding;

*To provide control of realized receivables at allotment level, with proper integration with bureau/office system command control ledgers; and

*To provide for commitment accounting at all levels of funding. [2, p180]

The basic organizational entity in the Navy's accounting system is the Authorization Accounting Activity (AAA). These organizations are designed to centrally perform the accounting functions for other activities. By centralizing these functions, the Navy hoped to achieve a more efficient use of resources and a more rapid collection of financial data. It relieved the operational units of excessive involvement in complex functions which would have otherwise been a tremendous administrative burden if done locally. When an activity is designated as an AAA, it is officially responsible for providing:

*Appropriation Accounting

*Inventory Accounting

*Plant Property Accounting

*Cost Accounting

*Payroll Accounting [3, p29]

Other functions can be assigned at the discretion of the Comptroller of the Navy (NavCompt) depending upon the size and processing capabilities of the AAA. Typically, however, the services provided by an AAA are static in nature from one period to another. That is, the data to be collected and the format in which that data will be displayed are, to a large extent, prescribed by NavCompt. Beyond this, customers can request

services of their AAA providing the requests meet the criteria of reasonableness as outlined in the NavCompt Manual, Vol. 3. An inherent responsibility of the AAA is to provide guidance to customer activities in order to assure more timely and effective management of resources.

E. THE NAVY'S DISBURSING SYSTEM

Unlike the accounting system, the present Navy disbursing system is quite different from that of the other armed services. This was not the case prior to World War II when the accounting system recorded expenditures as they occurred. Due to the rapid build-up of naval forces during the war and the large amounts of capital and payments involved with such a massive effort, contractors found it increasingly necessary to receive prompt, accurate payment for services so that working capital would not be depleted. This, in turn, allowed for vendor acceptance of new contracts. A point of saturation was reached within the accounting system when disbursements and the associated manual accounting procedures could no longer handle the influx of invoices. Several attempts were made to streamline the accounting procedures in the hope that payments could be expedited but these efforts were not enough to alleviate the problem. Under pressure from all sides, the Secretary of the Navy finally ordered that invoices would be certified for payment and that actual disbursement of funds would precede the accounting procedures for the payment. By so doing, the timeliness of payments was increased substantially but the Navy was committed to operating with separate accounting and disbursing systems.

The impact of this separation cannot be fully appreciated without considering its effect on the reporting systems involved. The accounting system was designed to measure and report the costs of operations to high level Navy offices, OMB and Congress. The disbursing system isolated payment operations from the accounting function, demanded strict accountability for public funds and reported cash collection and disbursement information to the Treasury Department. As long as the accounting and disbursing functions were integrated, there were no inherent reasons for any differences in the information reported by the two systems. Following the separation of the systems, reports became incomparable due to disbursements which had not been accounted for by the end of the reporting period and the frequent breakdowns in the flow of information between disbursement activities and accounting activities. The reconciliation process required to balance the two systems was complicated and time consuming.

The basic organizational entity designed to accomplish the mission of the present day disbursing system is the disbursing office. "A disbursing office is an activity, or organizational unit of an activity, whose principal function consists of one or more of the following: payment of military personnel, payment of civilian personnel, payment of public vouchers or issuance of United States Saving Bonds." [2, p173]

The disbursing system consists of a network of disbursing offices including the Navy Finance Center (NFC), five Navy

Regional Finance Centers (NRFC), and thirteen Navy Finance Offices (NFO). This system is designed to achieve the following objectives:

*Maintain fiduciary accountability for funds of the U.S. Government;

*Disburse funds in a timely manner so not to cause hardship to authorized recipients such as military and civilian personnel and outside contractors;

*Provide accurate, timely recording of disbursements in accounting records used by Navy managers at all levels; and

*To ensure the efficient use of resources in performing the disbursing functions.

The Navy Finance Center, located in Cleveland, Ohio, provides a variety of services. It administers the centralized military pay and allowance system of the Navy, performs administrative examination of pay records, performs specialized accounting, disbursing and reporting functions, and develops procedures to be followed in military pay operations throughout the Department of the Navy. It is also responsible for performing any function that may be assigned by NavCompt.

The five Navy Regional Finance Centers situated throughout the United States are primarily responsible for payment of dealer bills with the exception of those paid by a Defense Contract Administration Region (DCASR) and some bills chargeable to the Navy Industrial Fund (NIF). This delegation of responsibility to the various NRFC's made it possible to relieve local activity disbursing officers for other responsibilities.

In most cases it also reduced the time lag in the payment of dealers bills. In addition to bill payment, the NRFC's have a variety of other functions such as:

*Preparing and submitting to the Office of the Comptroller of the Navy summarized reports of all financial transactions for recording in the central books of the Navy;

*Reporting to activities concerned, the public voucher charges for stores and plant property accounting;

*Consolidating financial returns and preparing summarized accounting data reflecting the operations of all Navy disbursing officers within an area; and

*Reporting to activities concerned, all financial transactions for reconciliation of expenditures and collections. [2, p174]

Navy Finance Offices (NFO) are designed to provide disbursing services for military personnel of those activities designated by the Commandant of the Naval District with the approval of the Comptroller of the Navy. A typical NFO maintains the pay records of a large number of active duty military personnel in the area, provides services on travel claims, and may pay civilian payrolls when so directed.

The data collected by these agencies are consolidated and reported to higher authority on a monthly basis. Over the years, this form of reporting for the "cash system" of the Navy has proven to be very reliable and accurate. This is attributable to the fact that each disbursing officer is held financially and personally accountable for the legal expenditure

of funds placed under his control. He must maintain a detailed and accurate account of financial activities for examination by all echelons of management.

Hence, since World War II the disbursing and accounting systems have remained separate and distinct entities, each with its own networks to perform the "cash" and "cost" portion of the overall Navy Financial Management System. These separate flows of information can be seen in Figure A.

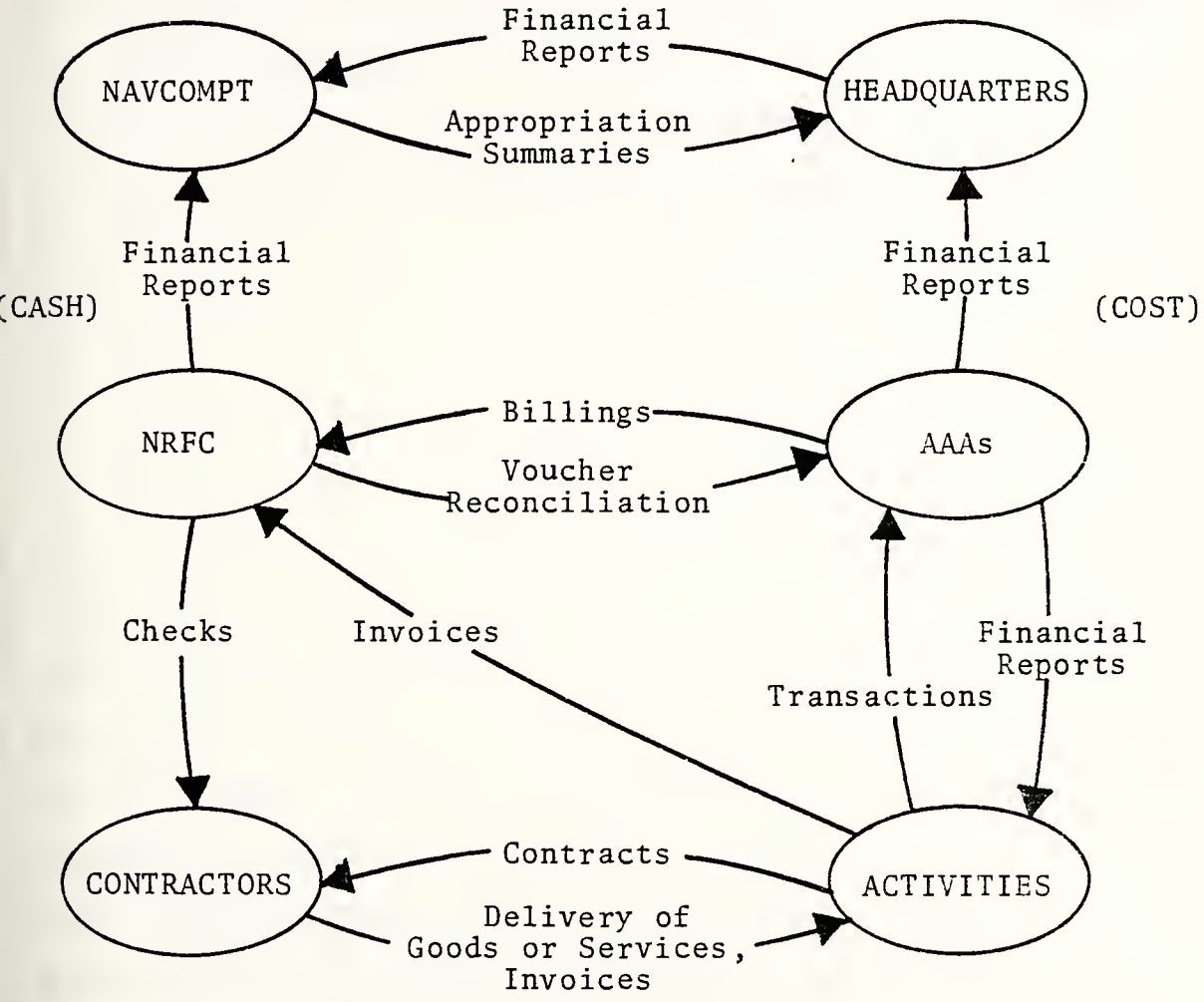
F. TRANSACTION TERMINOLOGY

To further illustrate this information flow, it is helpful to trace a request for goods and/or services through the two systems. For clarity, it is necessary to establish a formal definition of commitment, obligation, accounts payable, expenditure and reconciliation:

*Commitment: This is a firm administrative reservation of funds, based upon firm procurement directives, orders, requisitions or requests which authorize the recipient to create obligations without further recourse to the official responsible for certifying the availability of funds.

*Obligation: This is incurred when an order is placed, a contract is awarded, a service received, or similar transactions are entered during a given period requiring future payment of money in an agreed amount. Normally, an obligation liquidates a previous commitment. However, an obligation may not always be preceded by a recorded commitment and, in this circumstance, the commitment and the obligation are recorded simultaneously.

PRESENT FLOW OF FINANCIAL INFORMATION



Adapted from IDA General Design Manual.

Figure A

*Accounts Payable: This represents obligations for which the material or services have been received but not yet matched with an expenditure.

*Expenditure: Represents an actual cash disbursement which, when preceded by a previously recorded obligation, liquidates the amount obligated.

*Reconciliation: The process of matching every obligation in the system with its corresponding expenditure. By doing this, constant control over the funds within and between appropriations can be maintained.

G. ACCOUNTING AND DISBURSING INFORMATION FLOW

The accounting and disbursing process begins with individual activities submitting requests for materials or services. A stock point will be used in this example. Copies of the request are sent from the activities to their respective AAA and commitments are established on the activity's records by the AAA. Each day, the stock point forwards listings of bills to the Regional Finance Center for material that they have supplied to various activities. The Regional Finance Center then applies these bills to a mechanized program which identifies the responsible AAA for each activity. These bills (expenditures) are then summarized by individual AAA and forwarded daily by the NRFC to the AAA. The AAA processes these summaries as received and at the end of each month, performs a mechanized reconciliation of obligations, accounts payable and expenditures on file. The object is to match everything completely which would mean that every activity has 'paid' and has been subsequently

'charged' the correct amount of funds for every item or service received. A similar process is followed for outside contractors' invoices. This flow can be seen in Figure B.

H. PRESENT SYSTEM SHORTCOMINGS

Even though these systems have been meeting the external reporting requirements imposed upon the Navy, they have a number of shortcomings and inefficiencies. The major shortcoming is that the time between the disbursement of funds and the accounting for these transactions has precluded the financial system from accurately responding to the information requirements of Navy management. In addition, operating costs for these systems is becoming a major item of expense. As a result, the accounting and disbursing functions are less than fully effective in meeting the objectives of providing timely and accurate financial information for operational and management control.

The inefficiencies in the accounting and disbursing processes are attributed to a number of factors. The major contributing factor is that there are two separate accounting systems in the Navy, a cash accounting system and a cost accounting system. Differences in the data comprising these reports must be reconciled on a regular basis and require extensive effort throughout the Navy to identify and correct the ever present errors. Other contributing factors are:

*Geographical and organizational separation of the disbursing and accounting functions;

PRESENT FLOW OF FINANCIAL INFORMATION

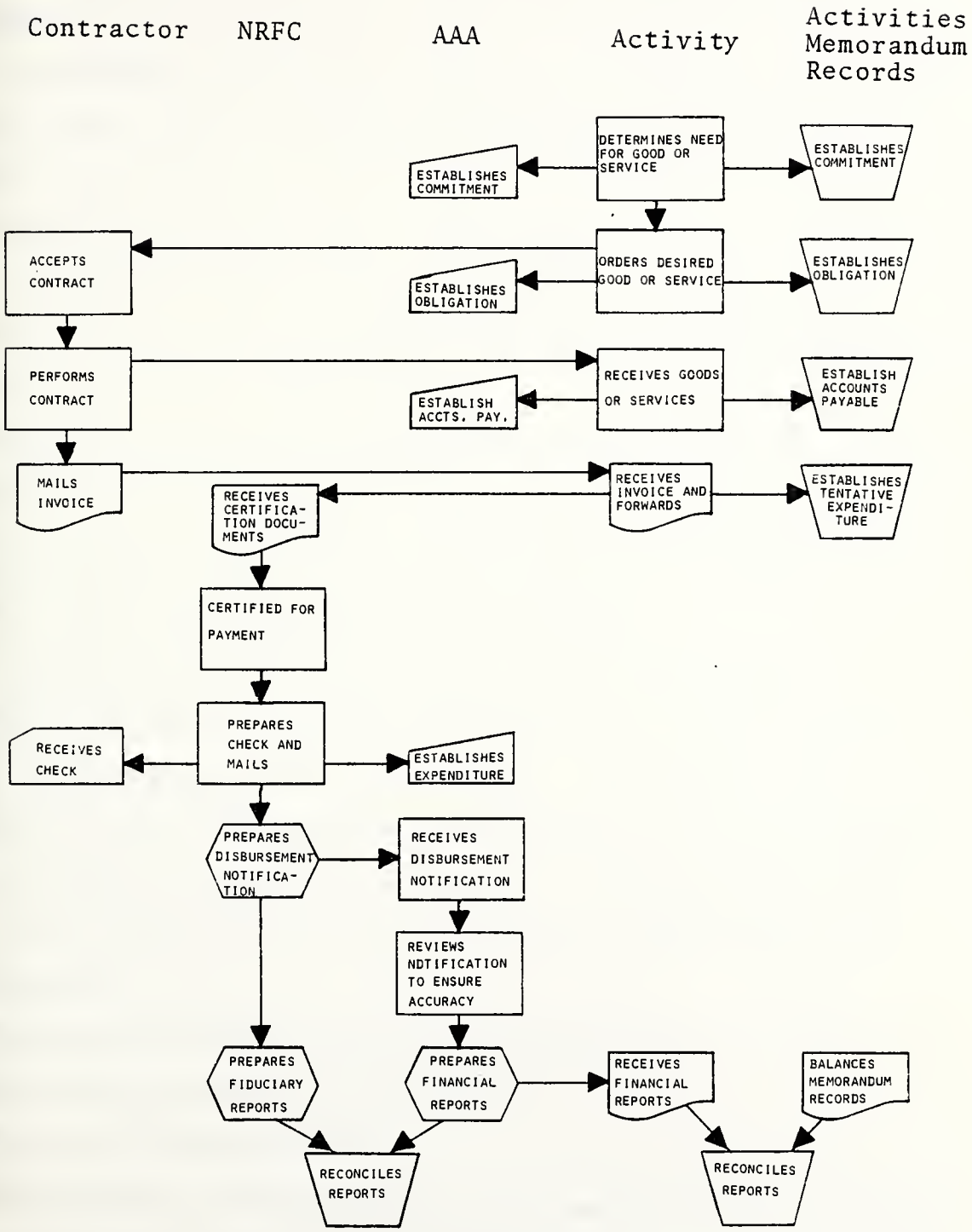


Figure B

*Mandatory reliance on the transmission, reconciliation, and retention of hard copy documentation;

*Timing and sequencing of the flow of information and documentation;

*Geographical separation of operating activities receiving fund authorization (allotment and operating budgets) and their supporting AAA; and

*The large number of AAAs. [4, p38]

Underlying these factors is a general tendency not to exploit the use of modern day data automation and communication technology. The voluminous amount of hard copy document flow necessary to keep the two systems in balance relies completely upon the U.S. mail system. Transmission of pertinent data can be accomplished more quickly and frequently at lower cost by use of modern telecommunication techniques.

Individually and in combination these factors have resulted in severe operating deficiencies in the accounting and disbursing processes of the Navy. They have led to excessive costs in performing and managing those Navy missions that depend upon financial information. These deficiencies are listed below and described in detail in the subsequent paragraphs:

*Multiple recording of the same detailed data at disbursing, accounting and operating activities;

*Untimely financial data;

*High support costs associated with preparation, transmission and processing of hard copy documentation;

*Multiple reconciliation of both disbursing and accounting data; and

*Approximately a two billion dollar balance of undistributed disbursements at any given time. [5, p1-5]

1. Multiple Recording of Data

Operating activities receiving fund authorizations maintain unofficial memorandum accounting records. These non-standardized records are necessary because official accounting reports are not received in a timely manner and in many cases they contain inaccurate information. Frequently reports are not responsive to current financial management information requirements. To maintain a record of the current balance of unobligated authority, operating activities must duplicate, at least in part, the processing performed by the AAA. Similarly, duplication exists between the accounting and disbursing offices since both must maintain copies of the same documents, one for accounting use and one for payment use. This leads to further duplication of both time and effort in the areas of file maintenance, data entry and record keeping.

a. File Maintenance

In this area, both Disbursing Officers (DO) and AAAs must maintain files of hard copy obligation source documents and disbursement and collection records.

b. Data Entry

Both DOs and AAAs must verify and manually record the financial data applicable to the original obligation. The AAAs must also record the obligation adjustment resulting from the disbursement.

c. Memorandum Records

Finally, the DOs must maintain a record of the available balances on contracts where partial payments are to be made. These memorandum records duplicate document status records included in the AAAs official accounting records.

2. Untimely Financial Data

Delays in the recording and reporting of financial data results from a number of very specific causes which may be summed into four primary factors: transactions in transit, processing delays including source data capture and duplicate processing by activities, limitation of resources required for processing (primarily personnel), and conflict of priorities within activities. These are explained in greater detail below.

a. Transit Delays

Exchange of hard copy documentation reflecting commitments, obligations, expenditures, material issues, performance and status reports between the AAAs, NRFCs, operating activities, headquarters, associated disbursing offices, and central disbursing offices will all experience considerable transmission delays when the U.S. Postal Service is utilized. These delays cover a span of from four to six days exclusive of any internal routing and processing time.

b. Processing Delays

Individual activities have local processing standards and schedules. Regardless of the individual schedule, major processing delays may be encountered at all activities.

Elapsed processing time between payment of a voucher and introduction of the voucher into the postal system range from three to seven days. Matching invoices to obligation documents and verifying proof of delivery causes delays up to twenty days in the processing of invoices (dealers bills). Another delay is caused when a mechanized AAA receives documentation and supporting mechanized accounting cards. It is usually necessary to prepare separate input records for data not captured in the supporting accounting cards furnished by the NRFCs.

c. Limitation of Resources

Experience has shown that the basic problem relates to hiring and retaining adequately trained personnel. They must be capable of processing the complex detail data efficiently and at the same time they must be able to prepare the required periodic status and cost reports. Additionally, the labor market for specific skills may be quite limited, depending upon the activity's physical location.

d. Conflict of Priorities

Basically there are two types of priorities under consideration which directly affect the day-to-day financial management process. First, there is the perpetual conflict between processing detail records into the system and the need to stop that type of processing and prepare required reports. The basic question that must be answered is, "How many transactions on hand can be set aside and to what degree will their exclusion distort the reports?" Secondly, when an activity

assigned AAA responsibility has a mission other than accounting or must share ADP support with other functions of the overall activity mission, there is always a question of processing priorities.

3. Orientation to Hard Copy Documentation

The present accounting and disbursing systems are dependent upon hard copy documents. The originator (manager) at the activity holding the funds submits copies of fund usage documents to the AAA for processing as financial transactions. The AAA usually transcribes the documents onto other formats such as keypunch worksheets. These documents are keypunched and then processed into the accounting system. When the financial transaction results in a disbursement or collection, the DO must also transcribe the necessary information to allow for key entry. This machine-readable record is normally processed through the Automated Public Voucher (APV) system which produces checks, supporting vouchers, and the Financial Reporting System (FRS) disbursement notification input record. The disbursement notification generated from FRS together with the invoices, receiving reports, vouchers, and in some cases, the machine record, are manually sorted and batched together for distribution by mail to AAAs. The AAAs must reconcile the data, keypunch additional information into their expenditure processing record and process the information into their accounting system. Further, because the entire accounting system is hard copy oriented, a large clerical effort is required to maintain the document files, memorandum records

and the official accounting records. Effort must be expended to control the movement of the hard copy documentation, trace missing transactions, process adjustments, and perform research on invalid transactions. In the area of document control, considerable effort is expended to ensure that documents are not inadvertently set aside and to ensure that transactions are not accidentally processed more than once.

4. Multi-Level Reconciliations

Reconciliations are performed between AAAs and NRFCs, and between AAAs and operating activities maintaining memorandum records. Generally, these reconciliations are performed manually and while necessary, they can be extremely costly and time consuming.

a. NRFC-AAA Reconciliation

Since requisitions and expenditures are constantly passing both within and between appropriations, responsible offices and major claimants are concerned that the expenditures applied to the allotments within appropriations that they are administering are just and correct. For this reason, controls are established to monitor the correct application of expenditures to allotments. The daily expenditure reports forwarded from the NRFC to the respective AAAs are supported at the end of each month with comprehensive expenditure summaries. The AAA uses the monthly summaries to ensure that all expenditures supposedly billed to them during the month, have in fact, been received. Secondly, the NRFC forwards listings by allotments to the respective claimants. The total of these submissions

is then reconciled with the totals reported on the monthly financial reports submitted by the AAA through the organizational chain of command. Differences between these totals are called undistributed disbursements and they represent the difference between disbursements actually paid by DOs and recorded on the appropriation ledgers at the claimant level and those recorded on the allotment ledgers at the AAA. The AAA reviews all summaries to identify the erroneous billings (wrong allotment) and corrections are then sent back to the summarizing NRFC. Naturally, the delays involved in summary transmission, processing and correction make it extremely difficult to ever balance the total expenditures in the system and frequently, adjustments to expenditure categories continue to be applied well after the appropriation has expired. This process is, however, an important one which attempts to maintain the integrity of the appropriation structure.

b. Memorandum Record Reconciliation

Reconciliation between operating activities and AAAs is performed by the operating activities to bring their memorandum records and the official accounting records into agreement. It is less formalized than the NRFC/AAA reconciliation but is still costly in terms of clerical effort.

5. Undistributed Disbursements

The significance of this problem is that for those payments made during the report month but for which the AAA has yet to receive the disbursement data, the gross obligation at the AAA level is over (or under) stated by the amount of

the difference between the obligation amount and the actual payment amount. To the extent this occurs, the true availability of funds at the operating level is under (or over) stated. On a Navy-wide basis, this misstatement of funds has been estimated at two billion dollars at any given time. The primary cause of undistributed disbursements at the close of an accounting period is transactions in transit between the NRFC and the AAA. Erroneous accounting data reflected in the NRFC-produced vouchers also accounts for a heavy share of the value of undistributed disbursements. [5, p1-6]

I. SUMMARY

While the current accounting and disbursing systems have served their intended purposes, significant improvements in the processing of accounting transactions are possible through the application of modern automated data processing and telecommunications techniques. Not only are efficiencies available, but reports to both management and higher authorities can be made more timely and accurately. In an environment that has experienced a continual decline in resources and a loss of expertise in fiscal and accounting personnel without a compensating decrease in workload, the inevitable result is an even greater inefficiency of the processes employed. A summary of current problems that the Integrated Disbursing and Accounting process hopes to overcome include:

*Fund holders performing unofficial memorandum accounting because of the untimely and often inaccurate information contained in official records;

*Physical separation of functions creating built-in time delays as each system depends upon the other for financial information;

*The dependency of the present accounting and disbursing systems on hard copy documentation when machine-readable materials can be made available. This problem is compounded by the loss or misplacement of documents resulting from multiple handling; and

*Physical separation of functions and the lack of data base structure which results in the necessity for numerous levels of reconciliation to account for the value of the undistributed disbursements. [5, p1-9]

The explicit design features of IDA that will attempt to overcome these shortcomings will be described and examined in subsequent chapters.

III. THE IDA CONCEPT

A. BACKGROUND

The development of the Integrated Disbursing and Accounting System can be traced back to early 1971 when the Secretary of the Navy issued SecNav Inst 5430.87. The purpose of this Instruction was to guide the design, development and implementation of a Navy-Wide Integrated Accounting System. This represents the first guidance given for the development of a fully integrated accounting and disbursing system.

In 1972 the Department of the Navy's five year Financial Management Improvement Program (FMIP) was initiated with SecNav Inst 7000.18. The intent of the program was to provide financial data to serve the needs of management, and to correct the deficiencies revealed in both internal and external audits of the Navy's Accounting System, many of which were described in Chapter II. The objective was to design and implement an integrated financial management, programming/budgeting, accounting and reporting system which would provide the following:

*Full and adequate disclosure of financial results;

*Effective budgeting, accountability and control;

*Reliable, timely and complete financial data; and

*Suitable integration.

In the area of accounting, the goal was to develop and implement an accounting processing network that would meet the

financial information and control requirements in the programming, fiscal and operating management structure. This goal focused on the idea that accounting was a service activity designed to provide information to managers.

As a direct result of SecNav Inst 5430.87, the auditing firm of Haskins and Sells was engaged by the Navy to conduct an extensive review of Navy accounting practices and procedures. The end product of this consultation was a report entitled Integrated Accounting System, General Design Manual which was released shortly after SecNav Inst 7000.18 was issued. The General Design Manual outlined the policies and objectives related to the Navy's accounting system and set forth the guidelines for a detailed development of the pertinent subsystems. It was designed to satisfy two objectives of the Comptroller of the Navy. The first was to achieve centralized direction over accounting system development and operations. The second was to develop a service oriented management accounting system that would respond to the financial information requirements of managers through improvements in reporting and processing. A subobjective of the improvement in processing was the consolidation of accounting and disbursing operations to improve the use of available resources. This was to be accomplished by reducing duplicate data, data handling, storage and reconciliation.

SecNav Inst 7000.18 was revised in October 1974, to reflect the guidance provided by the 1972 Haskins and Sells report and to incorporate the objectives of the Department of the Navy's

five year Financial Management Improvement Plan. It restated the purpose of the Navy's Financial Management Improvement Program in an attempt to establish and document major long range and middle range financial management improvement projects and objectives and to provide a basis for monitoring their accomplishment. Some specific objectives mentioned in the revised instruction included:

*Integrating the disbursing and accounting processes to eliminate the duplicate records currently maintained by both the disbursing and accounting offices;

*Eliminate the costly reconciliation process necessitated by these duplicate records; and

*Ensure timely, accurate and complete reporting of expenditures.

Among the improvement sub-programs identified by this instruction were the Joint Uniform Military Pay System (Jumps) and IDA.

Since 1972 a series of General Design Manuals have been issued, the latest of which is dated May 1977. These revisions have provided the updated guidelines and standards for the design and development of the overall processing network for internal and external flow of financial data. The objectives of the IDA System, as described in the General Design Manual, will be discussed in the following paragraphs.

B. PROPOSED IDA INFORMATION FLOW

The overall objective of the Integrated Disbursing and Accounting System was to improve the timeliness and accuracy of financial information for Navy managers and at the same time reduce the costs associated with these processes. IDA's primary objective can be further broken down into the following:

*Provide for direct entry of accounting data at the lowest possible level;

*Record accounts payable prior to disbursement;

*Certify and initiate payments at the AAA;

*Reduce hard copy documentation;

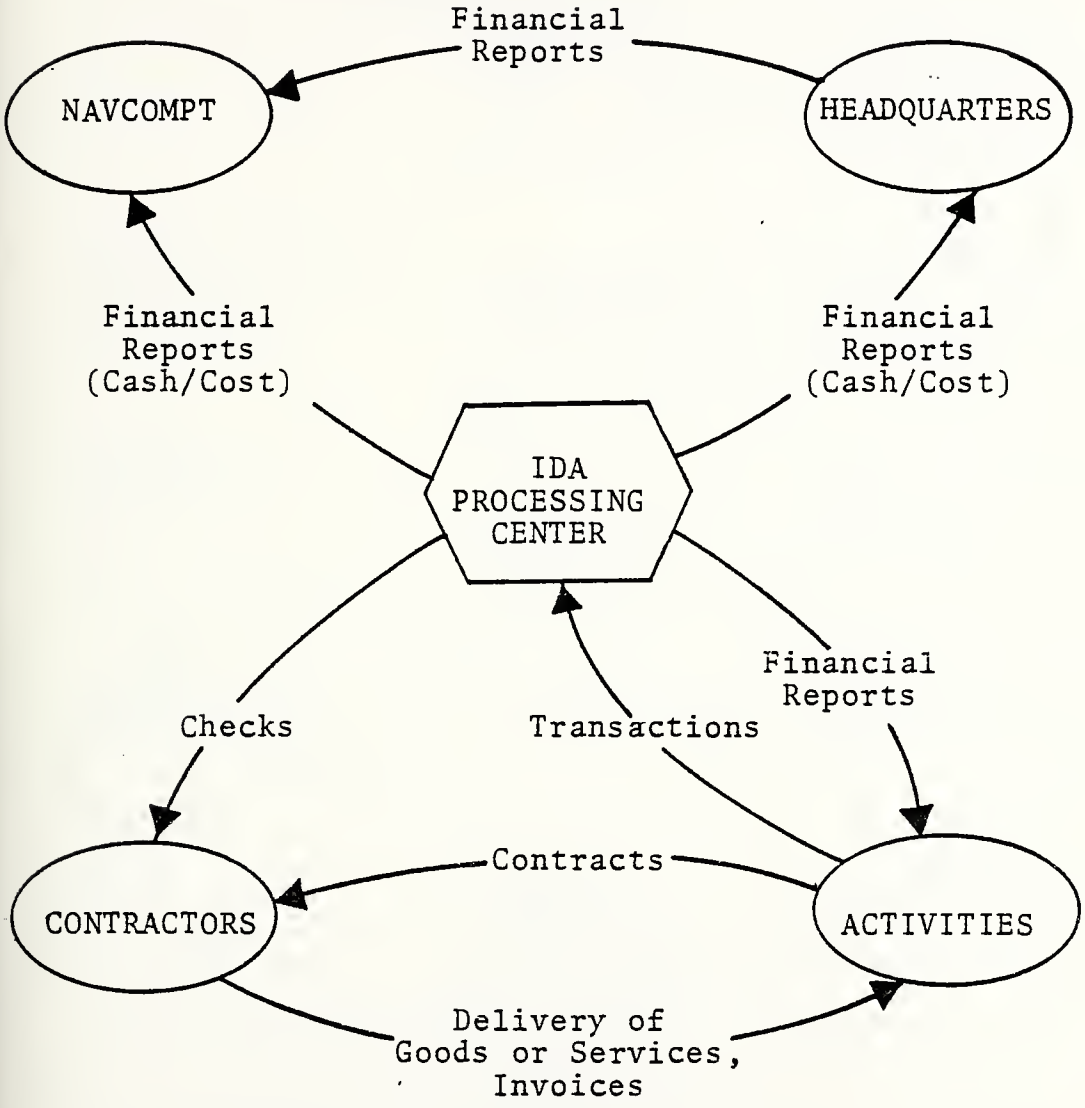
*Minimize reconciliation;

*Reduce undistributed disbursements; and

*Reduce support costs.

IDA was designed to include regional financial information processing centers which would provide both accounting and disbursing services utilizing advanced telecommunications techniques to the maximum extent possible. These services would include such things as cash and check payment to commercial vendors; processing of all types of accounting transactions; providing accounting services to smaller activities and preparing financial, non-financial and management reports. These regional centers would be linked to one another and to a central accounting and finance office for reporting purposes via telecommunications. This information flow is illustrated in Figures C and D.

PROPOSED FLOW OF FINANCIAL INFORMATION



Adapted from IDA General Design Manual.

Figure C

FLOWCHART OF PROPOSED FINANCIAL INFORMATION

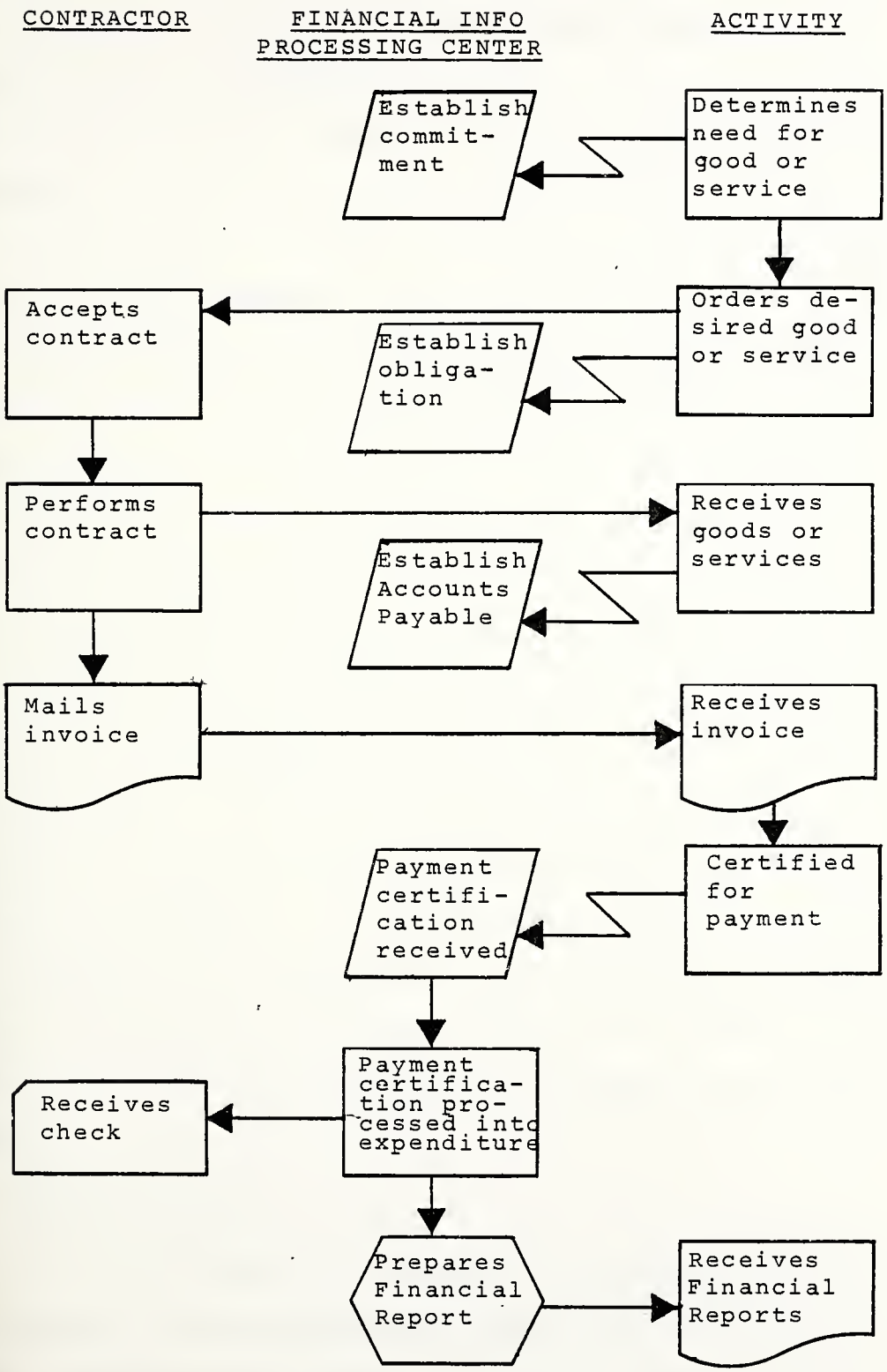


Figure D

The major differences between this information flow and the present one illustrated in Figure A are:

*The merger of the AAA and NRFC related functions of accounting and disbursing;

*The elimination of separate vertical cash and cost reporting systems;

*The transmittal of data via telecommunication lines vice the U.S. Postal System;

*One-time data capture by the originating activity resulting in considerable reduction of hard copy document generation and transmission;

*Elimination of the reconciliation process to match "cost" and "cash" results; and

*The reduction in undistributed disbursements. [4, p40]

A key point in this entire process is that IDA does not change the basic features of the present accounting and disbursing system. The natural flow of the financial process relating to authorizations, commitments and obligations remains basically unchanged; i.e., distribution of funds; establishment of commitments and obligations; and liquidation of obligations. However, the flow of accounting information between activities, within activities and through the accounting records will be changed.

C. FEATURES OF IDA

The basic objective of transaction processing under IDA is to integrate the accounting and disbursing functions into a single transaction data base by using one-time source data

capture and modern ADP and telecommunications technology. To accomplish this, a single set of documents will serve as the official accounting record. Initial entries, such as a commitment, will be used to establish the record. Successive entries, such as obligation or receipt data, are limited to only those elements required to update or expand the previously established records.

To further this objective, customer activities of the AAA will be provided with remote terminal devices to permit entry, inquiry and output of information in the data base. This will be possible on a near real time basis. It will eliminate the need to perpetuate or regenerate hard copy transactions and thus eliminate or reduce other duplicate files being maintained for accounting and disbursing purposes (i.e., memorandum records and receipt files). A single set of document files will become the sole support for all financial transactions.

Another objective of IDA is the maximum cost effective use of ADP capabilities in order to achieve a highly responsive and timely financial management system. The use of modern ADP techniques such as source data automation at customer activities, transmission of data by telecommunications, upgraded software at existing ADP installations and development of a random access data base will all provide substantial benefits in terms of reduced clerical efforts associated with data capture, reconciliation, corrections and machine processing. This will be in addition to more timely recording of obligations, accounts payable and expenditure data.

As explained in Chapter II, the Disbursing Officer retains pecuniary liability for all payments he makes. Therefore, he is entitled to receive and retain whatever documentation he deems necessary to support his payments. Under IDA, this pecuniary responsibility will be shifted to the official certifying the accuracy of the transaction. As a result, the disbursing process will become a by-product of the accounting system. However, disbursing officers will retain the fiduciary responsibility for funds accountability.

In consonace with the objective of the maximum use of teleprocessing techniques, the flow of hard copy documents will be eliminated or reduced to the maximum extent possible. This will be accomplished by retaining all source documents at the point of input into the system. This policy will reduce the proliferation of document reproduction, filing requirements, and hence a significant amount of administrative burden throughout the system.

What this all leads to is the development of an improved financial processing and reporting system at the local, headquarters and departmental levels of management. This improved processing will be accomplished through the establishment of a financial information processing system consisting of source data collection and entry and an automated data base which uses the accounting record as the basis for all financial transaction processing. Accordingly, information enters the system in a more timely, complete and accurate format and the accounting records are updated daily. The use of remote devices

wherever economically justified, allows activities prompt access to the data base for information required on a rapid or frequent basis. This capability will reduce the need for memorandum or unofficial accounting records. Other information required on a routine or periodic basis to fulfill reporting requirements can be generated by the processing system. The use of one data base to generate all reports permits extraction of detailed information required for local management reports and summarization of that same data in compiling reports for higher levels of command. This summarization of mandatory financial data from the transactional level to the departmental level should provide the Navy with the ability to issue accurate financial reports within five days of the end of the reporting period vice the present 30-45 days.

IV. IDA IMPLEMENTATION

A. IMPLEMENTATION PHASES

Although IDA represents a conceptually simpler method of both accounting and disbursing, it was recognized that the transition from the present system to the IDA information flow coupled with the high degree of mechanization involved in IDA operations would require a substantial transition and implementation process. To accomplish this goal, the implementation procedure was organized into phases which roughly represent the three major goals of project IDA.

1. Phase I

Phase I implemented the IDA objectives of combining the disbursing process with the accounting procedures. This preliminary action established an interchange between the NRFC and the AAA. Basic IDA information flow was realized in this phase with invoices being routed by activities directly to the AAA. After posting to accounts payable, if this had not been accomplished earlier in the process, the invoice is then examined for propriety, certified for payment and a tape of certified payments is prepared. This tape, which is compatible with the NRFC Automated Public Voucher (APV) system, is then delivered to the NRFC for check generation and payment. Hard copy invoices are retained at the AAA. Following disbursement, the NRFC develops an invoices paid tape which is then used to clear the AAA's accounts payable and record expenditures to the appropriate accounts.

During actual implementation at NSC, San Diego, phase I was subdivided into phase I and phase IA. NSC, San Diego, is a major AAA activity in the San Diego Naval complex. As of June 1978, NSC provided AAA services for 58 Operating Budget (OB) holders. Phase I consisted of establishing a document control function and invoice certification capability within the AAA thus reversing the flow of accounting information. This occurred on 1 August 1975 [6, p1]. Phase IA involved the development of a Data Exchange (DX) Master File. The objective of the DX file was to create a machine sensible file for timely and efficient interchange of data between the AAA and the NRFC, and between the AAA and its customer activities, although establishment of the latter communication link is part of a later IDA implementation phase. The DX file permitted a substantial reduction in hard copy public vouchers and correspondingly reduced clerical requirements in this area. A more detailed discussion of DX may be found in section F of this chapter. In essence, phase I and IA accomplished the primary IDA objective of integrating disbursing and accounting.

2. Phase II

The objectives of phase II consist of random access data base development, expansion of teleprocessing networks and the full integration of disbursing and accounting. At this point, a hard copy check generation capability will be incorporated within the responsible AAA as a by-product of a fully automated payment edit and certification process. The teleprocessing network is established between the AAA and the

customer activities which will permit limited input, inquiry and retrieval of accounting information. Additionally, a fully integrated random access data base is developed from the DX file established in phases I and IA.

Implementation of phase II at NSC, San Diego, consisted of three major subdivisions. Phase IIA, implemented on 1 October 1976 consisted of local check generation, establishment of a mechanized contract file to permit payment of multi-funded contracts, development of a limited remote terminal capability for major fund administrators and evaluation of phase IIA progress for possible exportation to other AAAs in the future. Phase IIA is an ongoing process at this time. [6, p2]

Phase IIB will consist of a teleprocessing network expansion and an increase in remote terminal input, inquiry and retrieval capabilities. As a direct result of these expanded capabilities, activities possessing remote terminals will be able to input many of their own accounting transactions. Invoices may be certified at the activity level with terminal input of the certification resulting in an automatic payment at the responsible AAA. Once established, the need for transmission or delivery of a hard copy invoice to the AAA is eliminated. All hard copy files will be maintained at the activity level.

Phase IIC represents the full integration of a random access data base which will be able to process accounting, disbursing and reporting requirements of the customer activities and higher level headquarters. This will eliminate

the current need for the numerous files required to derive both the Uniform Automated Data Processing System (UADPS) series accounting and the DX disbursing process. UADPS is a widely used and highly developed processing system which provides funds, inventory and plant/property accounting information along with several other functions.

3. Phase III

Phase III represents the final step in the establishment of the Financial Information Processing System (FIPS) in CONUS including Alaska and Hawaii. Although currently in the detail design stage of implementation, phase III has as its primary objectives the regionalization of Financial Information Processing Centers (FIPC) and supportive Financial Processing Centers (FPC). A Central Accounting and Finance Office (CAFO) will be established to provide an interface between the various FIPCs, higher level headquarters and non-Navy agencies. At the present time, NSC, San Diego, is scheduled to implement phase III in mid FY81. [5, p5-8]

4. Post IDA Development

One of the major objectives of IDA, as stated previously, is the establishment of a Financial Information Processing System (FIPS) to encompass all appropriations of the Department of the Navy. Due to the sheer magnitude of this endeavor, several areas were designated as deferred items to become part of the FIPS at a later date. These areas include:

*Overseas accounting activities;

*Navy Industrial Fund (NIF) activities; and

*Cross-disbursing transactions with other non-Navy government agencies. [5, p5-10]

Adequate interface design with these activities has been a prime design criteria for IDA implementation and FIPS development. Design development and procedures will be incorporated for these activities as a part of post IDA FIPS expansion only after the FIPS has been successfully implemented on a CONUS, Alaska and Hawaii basis.

B. REQUIRED REORGANIZATIONS

Under the IDA concept, the responsibilities and functions of existing activities will in many cases be reassigned and reorganized under a new information processing structure. The ultimate objectives of this reorganization are to align the cash and cost reporting systems and to take advantage of the economies of scale which will accrue to selective consolidation of reporting centers in certain geographic areas. The basic organizations which will result from this process have been designated as Financial Information Processing Centers (FIPC), Financial Processing Centers (FPC) and a Navy Central Accounting and Finance Office (CAFO).

1. Financial Information Processing Centers (FIPC)

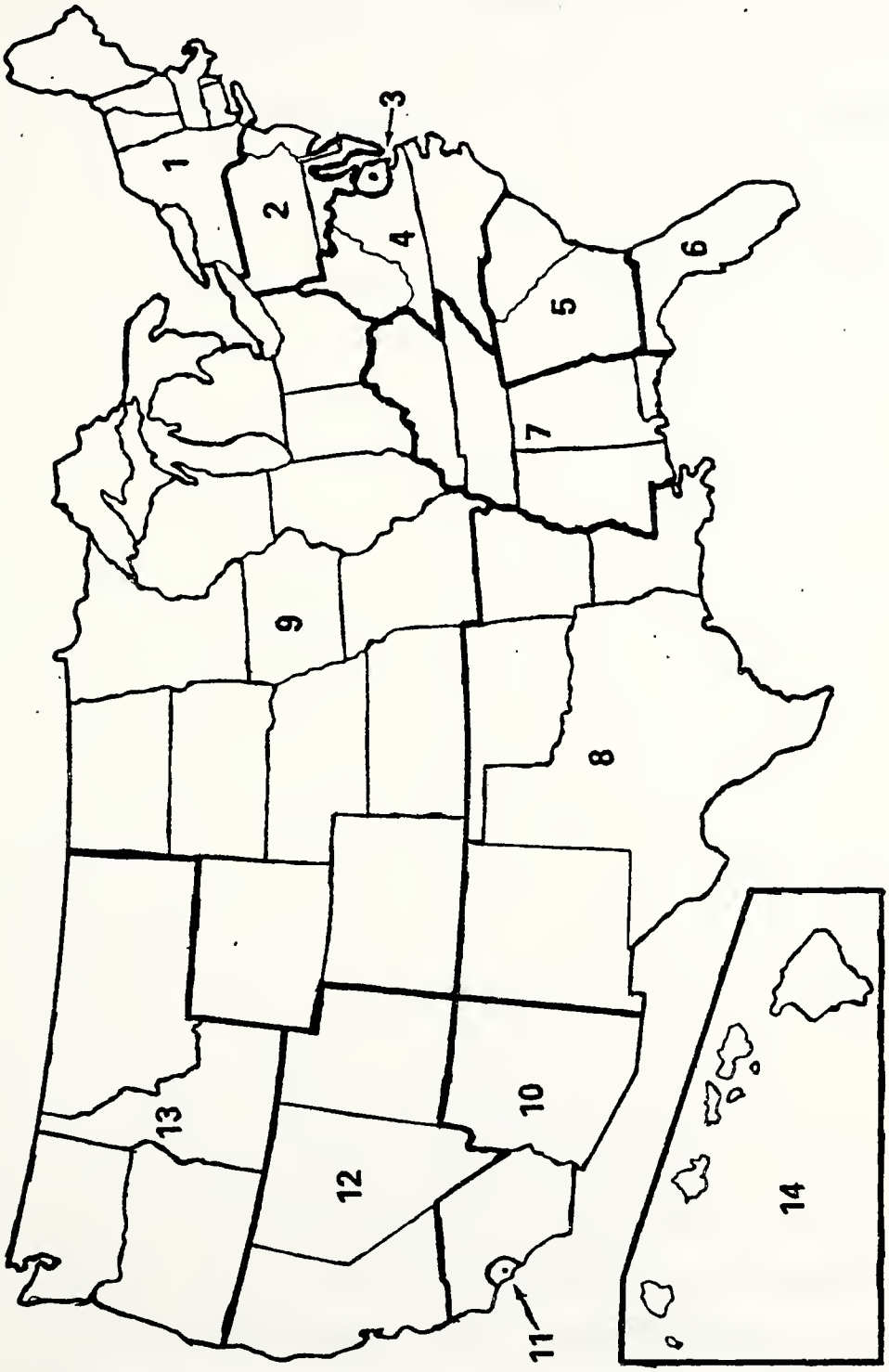
A FIPC represents the basic building block of the overall Financial Information Processing System (FIPS). In essence, an FIPC is a regionalized combination of the responsibilities previously assigned to both the AAAs and the NRFCs and it will be responsible for the full range of accounting, disbursing, collection and reporting requirements of its

assigned activity customers. Customer activities are assigned to a FIPC based on a number of factors including geographic location, organizational relationships and workload. As part of the consolidation aspects of IDA, many smaller AAAs may be combined or absorbed into a larger AAA as the transition into a FIPC takes place. Eventually, the present 275 Authorization Accounting Activities and five NRFCs which process the cost and cash information for over 4800 fund administering activities will be consolidated into 14 regional FIPCs. [5, p1] A diagram of these regions is shown in Figure E.

Internally, each FIPC will be organized into three functional divisions. These divisions will be the document control division, the quality control division and the internal review division. This organizational design will enhance the integrity of data entered into the system and should provide an excellent method of segregating the recording, approval and review responsibilities of a disbursement activity.

The document control section will have responsibilities that include receipt, initial analysis, control, microfilming and input of all source document information into the FIPS. Subsequent to the processing, the division will ensure that all documents designated for processing were, in fact, processed and that no other documents were processed erroneously. This will be accomplished by the use of multiple hash and control totals. In those situations where a customer activity possesses input capability through a remote terminal, the document control function will remain at the activity. The

Financial Information Processing Regions



Adapted from IDA General Design Manual.

Figure E

data input includes, but is not limited to, recording of fund authorization, commitments, obligations, expenses, reimbursable orders and payroll information. If possible, the remote terminal will have the capability to perform initial edit and verification tests to ensure that all required data elements are present at the time of input. If non-programmable terminals are to be used then the main frame must perform this process. Those activities without remote terminal capability will forward hard copy source documents to the document control division of the FIPC for processing. Input of data at the FIPC will be accomplished through the use of programmable terminals. Upon receipt at the FIPC, each document will be assigned a locally designed control number. This number will be used to ensure that documents have been processed and it will provide the foundation for an audit trail to the source document at a later date. After initial data entry, each document will be microfilmed using a blip encoding camera and placed sequentially on a cartridge reel of microfilm. Later access to the document image will be accomplished by loading the cartridge on a reader and inputting the control number which will allow the reader to automatically locate the correct document on the reel. Where microfilming capabilities do not exist, hard copy document files must be maintained. After data entry and microfilming the hard copy documents are sent to quality control for review and comparison with computer output summaries of daily input data. The documents are then returned to document control in preparation for permanent storage by batch control numbers.

Receipt and approval of invoices form the initial step in the payment certification process. In those cases where a certified receiver document is received prior to the invoice, the receiver document can be used to create an accounts payable pending receipt of the vendor's invoice. Again, input of data will be made from remote terminals if possible. Receipt of a valid and certified invoice becomes the basis for automatic liquidation of accounts payable when input and mechanically matched with the appropriate requisition and receiver documents. Document control is responsible for ensuring that all invoices have been properly approved and annotated to indicate required data elements.

The primary responsibility of the quality control division is to verify that the data which has been processed in the system accurately reflects the content of original source documents. In reviewing transactions which have been accepted as valid and processed, it is expected that the quality control division will examine a random sample of such transactions as the basis for the review. Tentative plans are to use machine generated statistical random samples that will meet a 95 percent reliability and a 99 percent precision probability.

The second major responsibility of quality control is to monitor suspense control. This includes the review and reprocessing of all transactions placed on the Currently Held in Suspense (CHIS, commonly pronounced as Chris) file. Document data may mechanically be placed on the CHIS file for

a number of reasons including inability to process due to erroneous data or lack of data information, invoice quantity or unit price exceeding obligation information, improper or incomplete dealer information and many other reasons. All documents placed on the CHIS file will include a field which explains the reason for non-processing or posting to the file. Quality control will research the indicated problems, correct as necessary and reprocess the transaction. The total time held in suspense is not expected to exceed 48 hours.

Finally, quality control is also responsible for reviewing the accuracy of reports and the final distribution of reports. This will include the maintenance of sufficient hard copy output to document processing and provide a complete audit trail.

The internal review division, in a capacity separate from the other two divisions, will be responsible for overall system audit requirements, monitoring and filing of reports and assuring that adequate documentation is provided to construct an audit trail. They will conduct routine random audits of specific records, files and transactions on a somewhat regular basis and certify system integrity.

2. Financial Processing Centers (FPC)

Financial Processing Centers are designed to act as a satellite or support organization to the FIPC in areas where there is a heavy concentration of naval organizations. For example, in Region 14 the designated FIPC will be located at NSC Pearl Harbor. Supporting this FIPC will be two FPCs; one

at the Naval Shipyard, Pearl Harbor, and one at the Public Works Center [5, p5-6]. In almost all respects, FPCs will operate in the same manner as an FIPC except that FPCs will submit summary financial and management information to the assigned FIPC for inclusion in the FIPC regional summary reports. In some cases, the FPC may not have a disbursing function and it will participate in a data exchange with the FIPC to accomplish all disbursement actions.

3. Central Accounting and Finance Office (CAFO)

A Central Accounting and Finance Office is to be established under the direct control of the Navy Accounting and Finance Center (NAFC), Washington. The CAFO will absorb all of the functions of the current Navy Regional Finance Center, Washington, and some functions of the NAFC. Among the major responsibilities of CAFO are the following:

*Technical discipline and control of the FIPS including all FIPCs and FPCs;

*Maintenance of a central data bank of budget, budget execution and other non-financial data as required;

*Act as ADP system design approval authority for all FIPS systems;

*Provide official accounting and disbursing reports for higher headquarters, Office of the Secretary of Defense (OSD), Treasury and Office of Management and Budget (OMB); and

*Act as the official focal point for entry or exit of accounting and disbursing transactions between the Navy and other governmental agencies. [5, p4-2]

IDA plans call for the interconnection of all FIPCs with CAFO by high capacity telecommunication lines. This will allow for the daily transmission of summary financial information by the FIPCs to the CAFO and correspondingly a daily update of major claimant and Department of the Navy accounting and disbursing records. Summary information is currently defined as appropriation and subhead level and in some cases includes the program element level. Through the use of remote terminals, the major claimants will be able to inquire and determine fund status through the CAFO. Reports returned on-line should not be more than 24 hours old. With this capability, fund administrators will be able to obtain timely and accurate information which may be required in the decision-making process.

Just as accounting and disbursing information flow from the FIPCs to the CAFO, the CAFO will receive copies of the various fund authorization documents from NAFC, record them in the central data bank and forward the authorization information to the activity level. A daily balancing of all major accounts at the CAFO will ensure that authorizations have not been exceeded.

All Navy Disbursing Officers (DO) will transmit a daily Disbursement and Fund Status Report and a monthly Statement of Accountability either directly to the CAFO or to the CAFO through a FIPC. These reports will be summarized at CAFO for submission of required reports to NAVCOMPT, OSD, and Treasury.

As a central focal point of Navy financial information, CAFO will act as the distribution point for all financial "transactions for or by others". This will include the Inter-fund Billing System (IBS), International Balance of Payments (IBOP), and cross-disbursing transactions. A two-way flow of transactions both to and from the individual FIPCs will be required. All transactions should take less than 48 hours to process and hard copy transmission of documents will be strongly discouraged. [5, p4-7]

C. IMPACT OF MAJOR CLAIMANTS

During the original conceptual phase of IDA it was envisioned that FIPCs would be established on the basis of geographic regions with major claimant information being filtered and summarized only at the CAFO level. However, several factors concerning major claimant procedures and requirements were recognized shortly thereafter and the strict regional concept of a FIPC was somewhat modified. The factors involved with this restructuring included the desire of major claimants to retain final release authority for financial reports concerning their commands, the basic difference between operating budgets and allotment accounting systems and the high degree of sophistication which already existed in the Chief of Naval Education and Training (CNET) and Naval Facilities Command (NAVFAC) financial reporting systems.

Subsequent to the introduction of the Navy's Resource Management System (RMS) accounting in Fiscal Year (FY) 68, CNET developed an extensive and highly effective major

claimant financial reporting system among its subordinate commands. Emphasis was placed on all aspects of RMS and realizing the multiple benefits which "operating budgets" (OBs) could provide to management. Along with this, a financial reporting network was designed which channeled financial and managerial information from CNET commands all over the country into the major CNET command headquarters in Pensacola, Florida. Development efforts were taken to ensure that accounting information could be used as a managerial tool in the areas of budgeting, performance evaluation, analysis and in decision-making. Several years of development and high level interest within CNET resulted in what would appear to be the forerunner of the FIPS concept. NAVFAC progressed in a program of similar nature with major claimant information being collected, summarized and released in the form of reports for higher level commands from the NAVFAC main processing center in Port Hueneme, California. The existence of both of the systems at the beginning of project IDA had a strong impact on the final structural form of the FIPS.

The regional concept of FIPCs was also modified by the Navy's use of three accounting procedures. Briefly, the three procedures are allotment accounting, the OB procedures for the operating forces and the OB procedures for shore activities. Allotment accounting is used for all funds which are authorized by any appropriation other than Operations and Maintenance, Navy (O&MN) and Research and Development, Navy (RDN). Allotment accounting in its most basic form could be equated with a

detailed checkbook accounting system. However, OB accounting under RMS is a significantly more complex system with emphasis on the managerial controls and managerial tools that a well designed budget system can offer. OBs are used as fund authorizations for all O&MN and RDN appropriations. OB accounting is further subdivided into accounting procedures for operating forces and accounting procedures for shore activities. The use of three different accounting procedures at the activity level would have created major problems in designing a FIPC capable of providing the necessary support.

At the strong urging of both the Atlantic and Pacific Fleet Commanders and after review of the CNET and NAVFAC reporting systems, it was decided to designate one FIPC on each coast as the focal point for the Fleet Commander's financial information. These units were called Fleet Accounting and Disbursing Centers (FAADC) with one located in Norfolk, Virginia, and the other in San Diego, California. The newly designed FAADCs were to assume the fleet activity accounting responsibilities formerly held by the Fleet Aviation Accounting Offices (FAAO) and the disbursing functions of the NRFC system.

To briefly review, at this stage in the design process two distinctly separate organizations had evolved. Fourteen FIPCs had been designated to handle the allotment accounting and shore accounting under OBs for their designated non-fleet activities. Two FAADCs were designated to handle both forms of operating budget accounting for the Fleet Commander activities.

It was also agreed that the overall collection effort for each major claimant's financial information would be assigned to a specific FIPC. Thus, at the end of each data collection period (usually 24 hours) each FIPC would transmit summarized major claimant information to CAFO, transmit detailed accounting and disbursing data by major claimant to each major claimant's designated FIPC and receive detailed data from all other FIPCs having information for its own specifically designated major claimant. In this manner, major claimants would possess accurate, timely and detailed financial information for use in issuing required reports and assisting in the decision process. At the same time, CAFO and high level headquarters would have timely summary information not detailed by major claimant. If headquarters organizations required specific major claimant information not previously used in a formal report, the request would have to be submitted to the major claimant for compilation, review and release. This situation would permit the use of accurate and timely information at all levels of command without violating the responsibility and authority of major claimants to review the information prior to the issuance of reports.

As a major claimant, the Naval Supply System Command (NAVSUP) played a major role in the development and particularly in the implementation of IDA. NAVSUP is tasked with the formulation and implementation of supply management policy and procedures to be utilized in handling material supplies for Navy and Marine Corp activities.

Naval Supply Centers (NSC) are one of several types of NAVSUP field activities. Located in major regional centers, these organizations act as warehousing, purchasing and issuing activities to supply designated end use items to naval commands within their area. Supply center AAA services are provided by an internal accounting department. In addition to accounting for their own supply center transactions, the NSC AAA provides centralized accounting services to other smaller naval activities within the area which do not have a designated AAA located internally.

The various types of NAVSUP field activities account for slightly more than 50 percent of all operating budgets and over 80 percent of all dollars assigned to operating budgets issued within the Navy. Previous design and development of the vast majority of Navy inventory and accounting systems has been done by NAVSUP. NAVCOMPT assigned primary responsibility for IDA functional design and implementation to NAVSUP. The reason behind this was NAVSUP's heavy involvement in the accounting area and the command's critical dependence on accurate inventory and financial information for its effective and efficient operation.

D. IMPACT OF TECHNOLOGY

The original IDA cost benefit study performed in 1972 was based on a current state of the art design which used primarily off the shelf hardware. In the time period since then, several major developments in both ADP and telecommunications have

allowed a realization of enhanced system's performance capability in conjunction with rapidly declining system costs. By the time of final phase III implementation in FY81, the IDA system on the whole should reflect approximately 1978 costs and technology. This is due primarily to procurement, installation and testing lead times for the major hardware and software components.

1. Automatic Data Processing Developments

Several fairly recent developments in the ADP field have permitted a magnitude of increase in final system performance. Response time, processing capacity, storage capacity and ease of human interaction with the system have all been positively influenced by the economic accessibility of so-called intelligent or programmable terminals. These units will provide the ability to rapidly transmit transactions on a batch basis to the mainframe for processing. Input and data edit and verification is simplified resulting in a significant decrease in input errors during initial data capture. Output and inquiry procedures have been similarly simplified.

The advent of front end computers has relieved mainframes of many administrative requirements and has permitted substantial increases in mainframe processing capabilities. This will prove of great value at high volume transaction sites such as CAFO, SPCC, ASO, NSC's and the FAADCs.

Perhaps some of the greatest enhancements to IDA in the ADP field have been made in the software area of integrated data bases. Although integrated data bases were not a new idea

in the early seventies, subsequent design approaches and development in this area have made quantum increases in the construction and process manipulation of a data base. While not critical to the success of IDA, these developments have increased IDA capability to interact and exchange data with other Navy information systems.

In a somewhat related field, microfilming has experienced similar advances. The use of magnetic encoding sensors and high speed film spools has permitted the near instantaneous retrieval of source document images. The size reduction process and the simplified file systems in use today have lowered filming, filing, retrieval and personnel costs greatly. A source document retrieval capability at some point in the accounting system provides the basis for the required audit trail. Today's microfilm systems satisfy that requirement in an extremely efficient and effective manner.

2. Telecommunications

The falling costs and increasing capabilities of remote terminals should allow assignment of remote terminals to activities which were not previously scheduled to receive them. The original 1972 cost benefit study based terminal assignment on transaction volume of activities and required a minimum threshold of cost avoidance to be recognized due to terminal assignment. In the years since that study the cost of terminals has dropped while personnel costs have increased.

Land line communication from processing centers to both CAFO and activity terminals was a part of the original

design. Many land lines existed at the time and IDA would require only a few dedicated time periods each day for the transmission of data. In some cases, such as CINCPACFLT, the operation and maintenance of land lines from the various activities to the FIPC/FAADC can become quite expensive. In addition, the number and capacity of lines between any two locations may be limited and overworked. Priority problems can arise which result in some information transmission being delayed. Telecommunications has recently provided the answer to this with the advent of satellite communications. Compressed data transmission rates have been increased significantly in the last few years at the same time that leasing costs have decreased. Based on historical industry trends it could be anticipated that within the near future, data transmission via satellites will rival land line transmission costs. For several segments of the IDA network this could result in much more favorable response times.

E. PROTOTYPES

As mentioned previously, the IDA concept represents a decidedly simpler means of Navy disbursement and accounting. However, from the outset its implementation was perceived as a complex and demanding task that would require substantial time and several intermediary steps.

The pre-IDA system, with all of its shortcomings, was operational at this time and although timeliness and accuracy were not always available, the system did manage to get the job done. This came as a result of religiously maintained

memorandum accounting records at the activity level. A natural concern for unforeseen IDA implementation problems and the attendant possibility of other major problems in accounting and disbursing documentation prompted the designation of four prototype implementation activities. By so doing, the IDA designers were permitted the opportunity to preview system benefits, focus technical expertise on implementation problems and insulate the rest of the Department of the Navy (DON) from any major problems encountered during the transition.

The four prototypes were selected as a representative cross-section of the financial systems in the DON. The four activities and their related financial systems are as follows:

Activity	Financial System
Facilities System Office (FACSO) Port Hueneme, CA.	Management Information System for Military Construction and RMS Funds (Allotment and OB Accounting)
Ships Parts Control Center (SPCC) Mechanicsburg, PA.	Allotment Accounting
Navy Regional Finance Center (NRFC) Great Lakes, IL.	Operating Budget (Shore) Accounting
Naval Supply Center (NSC) San Diego, CA.	Operating Budget (Shore) and Allotment Accounting [5, pl-15]

F. DATA EXCHANGE AND RELATED PROCESSING DEVELOPMENTS

Prior to entry into phase I of IDA, it was recognized that a flexible data base needed to be developed which would be capable of interacting with both the Uniform Automated Data Processing System (UADPS) and the NRFC Automated Public Voucher (APV) system. To satisfy this requirement, NAVCOMPT established Data Exchange (DX) as a subset of project IDA in December 1974. The Naval Supply Systems Command (NAVSUPSYSCOM) was tasked with DX development and subsequently assigned responsibility for its development to the IDA prototype activity, Naval Supply Center, San Diego. [7, pl-2]

As a mechanized interface between the separate accounting and disbursing functions, the objectives of DX included the following:

*Entry of obligation data by telecommunications or computer link directly by the customer activity;

*Use of a single record for both the accounting and disbursing function which would also provide for the recording of accounts payable prior to disbursement action;

*Allowing a highly mechanized payment certification process to produce a payment based on accounting records;

*Production of machine sensible payment data by the AAA which would interface with the NRFC disbursement reporting systems;

*Improve timeliness and accuracy of financial data by the use of an on-line data base;

*Reduce hard copy document transmission by maximum reliance on machine sensible media whenever possible;

*Minimize reconciliation through the use of a single data base by the customer, AAA and the NRFC;

*Reduce unreconciled disbursements since expenditures were to be based on the accounting records; and

*Reduce support costs, primarily at the NRFC and AAA. [7, pl-1]

During phase I implementation, DX took its original form as an integrated master data base. Several input validation and edit routines were created to help purify the data on entry and to reduce non-processing of invalid entries during UADPS and APV processing.

In phase II, which was implemented at NSC, San Diego, on 1 October 1976, a payment certification and check issue module was developed that allowed full invoice processing without reliance on the NRFC. This module and other DX support modules developed during phase II have been designated IDA/DX programs. Due to the orientation of NSC, San Diego, where the programs were developed, the IDA/DX programs are similar in format and construction to the UADPS series programs and in many cases they represent UADPS programs that have been modified for the IDA system. They significantly enhance the ability of the DX data base to interact with the UADPS series programs and all but eliminate the use of APV in the disbursing process except in the area of accountability reporting.

The Fleet Material Support Office (FMSO), acting as the CDA for the UADPS series programs has undertaken a formal modification project to develop a final UADPS/IDA package. The structure of this program package is expected to closely

resemble that of the pre-IDA UADPS series and provide similar output reports. Development of these programs has relied heavily on the UADPS modification implemented by NSC, San Diego, in their prototype capacity.

Although it appears that all NAVSUP commands will utilize the UADPS/IDA programs when they are finalized, it is not at all clear what type of processing system will be used by other major claimants. CNET's Naval Education and Training Financial Management Information System (NETFMIS) has provided a competitive alternative to the UADPS system. In many respects, NETFMIS represents a "total comptroller package" with its ability to develop budgets, progress and performance evaluations, accounting reports and manipulate non-financial data. CINCPACFLT, as an example, has tentatively chosen to implement IDA in FAADCPAC utilizing the UADPS/IDA programs. However, detailed studies on a possible switch-over to a fleet modified NETFMIS are currently underway.

G. INTERFACE WITH OTHER NAVY INFORMATION SYSTEMS

Regardless of the final processing programs selected, it should be recognized that any integrated accounting and disbursing system is nothing more than a small subsystem of the overall Navy Financial Management Information System. It is imperative that the IDA system be capable of interacting and exchanging data and information with a host of other systems. This interface has received close attention by IDA design authorities but due simply to the numerous interfaces involved, some compromises have been necessary. Incompatibility between

various system's hardware and software components usually require the development of a rather extensive and sometimes inefficient software package to provide a functional interface. Although much effort has been directed towards a standardization of Navy and DOD system's components, variations in local usage and requirements and an everchanging technology base will always necessitate the use of non-standard components.

The following list is offered as a brief but representative sample of the types of information systems that IDA will eventually interface with:

*Material Management Systems of the System Commands
  Procurement Plans
  Delivery Exceptions
  Price Revisions
*Planning Programming and Budgeting System (PPBS)
*Contractor Reporting System
*Defense Contract Administrative Service (DCAS)
  Contracts
  Shipment/Performance Data
  Contract Payments
*Navy Cost Information System (NCIS)
*Manpower and Personnel Management Information System (MAPMIS)
*Various Major Claimant Management Information Systems
*International Balance of Payments (IBOP) System
*Interfund Billing System (IBS)

*Joint Uniform Military Pay System (JUMPS)

*Various Management Information Systems used by

Naval Shipyards (NSY)

Naval Air Rework Facilities (NARF)

Naval Industrial Fund (NIF) Activities

Naval Stock Fund (NSF) Activities [8, pI2-19]

V. DEVELOPMENT OF IDA IN THE SAN DIEGO COMPLEX

The following sections will highlight and elaborate on some of the more significant aspects of the IDA implementation process as it has occurred in the San Diego area. The two major organizations involved are the Naval Supply Center in its capacity as a AAA/FIPC and the Fleet Accounting and Disbursing Center, Pacific (FAADCPAC). The observations and comments included herein reflect those of the authors and should not be construed as official statements of the United States Navy or any naval command referred to within the chapter. The basis for this research consisted of personal interviews and phone conversations conducted with various members of the following commands:

*NAVCOMPT

*Navy Accounting and Finance Center

*NSC, San Diego

*NRFC, San Diego

*FAADCPAC

*Naval Air Station North Island

*Naval Air Station Miramar

A. NAVAL SUPPLY CENTER/FIPC

The AAA/FIPC function within the Comptroller Department of NSC, San Diego, is physically located on floors five and six of Building 1 at the corner of Harbor Drive and Broadway in downtown San Diego. As such, it enjoys a central location

within the San Diego area although customer activities are located as far away as the state of Washington with some activity detachments in sites as remote as Saudi Arabia. The AAA is responsible for accounting services for nearly 60 OB holders comprising approximately 115 operating targets, payroll services for 105 activities and plant accounts for 75 activities. Staffing, as of June 1978, was at a level of 138 civilians and one uniformed military director.

Prior to IDA, the AAA was organized primarily along functional lines. The three major branches consisted of inventory accounting, the cost and allotment branch and the payroll and timekeeping branch. The IDA project leadership position within NSC was organizationally placed external to the Accounting Division and assigned to Systems Analysis in the Planning Department. During the initial stages of implementation, the AAA drew heavily on expertise and the design background knowledge of both NAVCOMPT and NAVSUP. A detailed statement of goals, responsibilities and deadlines was developed and appears to have been utilized.

The IDA section has taken a position as a fourth branch in the AAA organization. Personnel have been obtained primarily through reassignment and retraining of cost and allotment branch personnel and in fact, the overall AAA manning level allowance was lower in June 1978 than it was prior to the introduction of IDA. Although attrition has been accomplished primarily through retirements, a non-hiring policy and voluntary personnel actions, several positions have been

eliminated which resulted in involuntary personnel separations. These actions have caused some minor problems and confusion but in the opinion of the IDA branch head, the impact has been minimal. There existed a general belief in the organization that allowance reductions were due primarily to IDA.

The AAA utilizes the NSC's Burroughs 4700 mainframe and a 774 frontend computer for its processing. This equipment is also located in Building 1 and it is operated by the NSC Data Processing Department. Nine remote terminals had been placed in each of nine major activities as of June 1978. In addition, the AAA has three terminals within its own spaces for direct input of transaction data. Plans are underway for a major expansion of present NSC processing capability through the acquisition of a yet-to-be-determined number of intelligent terminals.

At each major implementation step or change of procedures, the AAA initially used only NSC transactions and accounts to operationally check the new system. This parent command testing approach to implementation served to protect other customer accounting records from unforeseen problems until they could be rectified. This type of action characterized the genuine concern for professional customer accounting service that the authors observed within the AAA.

B. FAADCPAC

In its capacity as the "Fleet Commander's FIPC", FAADCPAC is under the operational control of CINCPACFLT and receives technical direction and guidance from NAVCOMPT. It represents

the integration of FAAOPAC and the NRFC and a sizable consolidation of the AAAs located within FAAOPAC, NAS North Island, NAS Miramar and some fleet accounting responsibilities formerly assigned to NSC, San Diego. FAADCPAC will be responsible for OB accounting for shore activities, an area which has been highly developed by several prototype activities, and OB accounting for fleet activities which has not been nearly so highly developed. Further, the geographic location of activities serviced covers the entire Pacific Ocean with the major claimant located in Pearl Harbor, Hawaii. As such, IDA implementation at FAADCPAC is a considerably more complex operation than that at NSC.

FAADCPAC was originally scheduled to occupy spaces on the fifth and sixth floors of Building 1 on or before phase II implementation on 1 October 1978. This, however, was predicated on approval of a Military Construction appropriation for FY78 that would have permitted a renovation and refurbishment of the assigned spaces. The bill as passed did not include funding for the needed work and hence the consolidation of assigned personnel will, in all likelihood, be delayed until at least mid calendar year (CY) 1979. This single factor alone has had an immeasurable impact on the implementation progress to date.

A detailed plan of action and milestones was developed in early 1977 and various command representatives were assigned to both an eight member IDA steering committee and a thirteen member systems improvement working committee. Each member of

the latter represented a different command. According to the three members of the working committee who were interviewed, all tended to agree that direction, guidance and leadership have been absent during the entire implementation process. This is no doubt due in part to the distance between commands and the large and diverse composition of the committee. In addition, the individual who has been selected to become the FAADCPAC Accounting Branch Head on 1 October 1978 is currently filling a similar position at NAS North Island. The combination of regular duties at North Island and substantial IDA implementation responsibilities may have been too much to assign to even the most capable of managers.

The AAA consolidation aspects of IDA within FAADCPAC has created some unique problems in itself. In order to establish a FAADCPAC accounting branch, it will be necessary to reassign accounting technicians from North Island and NAS Miramar to FAADCPAC in Building 1. The personnel residing in Coronado near North Island are faced with commuting into San Diego over Coronado Bridge (toll). Miramar personnel, the majority of whom live north of the air station, will have to commute approximately three times farther once the consolidation in Building 1 takes place. Occupation of spaces in Building 1 was originally scheduled for the summer of 1978 prior to phase II implementation on 1 October 1978. Phase II is still scheduled for 1 October and until the spaces can be rennovated, the FAADCPAC accounting branch will operate from three different sites or detachments. Within the comptroller office at NAS

Miramar, accounting technicians reassigned to FAADCPAC and responsible to a branch head in North Island, will continue work in offices shared by those few accounting personnel who are to remain assigned to Miramar. This situation will, in all likelihood, continue for at least six months to a year, presenting the potential for a multitude of IDA implementation problems.

The accounting personnel at NAS Miramar are, almost without exception, the most dedicated and professional civil service employees the authors have had the pleasure of working with in quite some time. They are extremely loyal to their command and committed to the timely and accurate execution of their duties. They take great pride in their consistently low error rates and believe that this contributes significantly to the proper financial management of all accounts for which they provide services. Work assignment is organized along cost center lines wherein one technician performs all phases of transaction accounting for his or her cost centers. A familiarity with cost center operations, personnel and continuing or major transactions is developed. Source document errors or inconsistencies are more easily identified and the system fosters a sense of responsibility for one's own work. This type of work organization seems to operate extremely well.

Because of their loyalty and high quality service to Miramar, the AAA personnel have a sincere concern for the quality of service to be provided to NAS Miramar after FAADCPAC consolidation. Although supervisory personnel understand and

agree with the objectives of IDA, they were somewhat sceptical about the consolidation aspects of organizing FAADCPAC. Technical personnel did not seem to understand IDA and, of course, shared the scepticism of their supervisors.

During implementation planning for phase II, NAS Miramar representatives on the working committee wanted a majority of their accounting responsibility and personnel to remain at Miramar after implementation. Several official letters on this issue were exchanged between NAS Miramar and Commander Naval Air Forces U.S. Pacific Fleet (CNAP). The issue terminated in a decision against the Miramar representatives during what has been described by several committee members as an active discussion at a working committee meeting.

In contrast to the NSC implementation effort, CINCPACFLT, CNAP and FAADCPAC have sought virtually no guidance or assistance from other sources. CINCLANFLT, according to several reports, is progressing rapidly in their implementation at FAADCLANT, Norfolk, Virginia. NAVCOMPT has resources and expertise available and has indicated a willingness to assist commands if requested.

Up until the end of June 1978, FAADCPAC owned and operated their own computer system in Building 1. This system is separate and independent of the NSC computer installation. The FAADCPAC hardware transferred at the end of June to the Data Processing Service Center, Pacific (DPSCPAC) San Diego. FAADCPAC now uses the equipment on a time sharing basis for a minimal per hour fee. On 1 October 1978, DPSCPAC will be

redesignated a Navy Area Regional Data Automation Command (NARDAC) reporting directly to the Naval Data Automation Command (NAVDAC) instead of CINCPACFLT. NARDAC plans call for the replacement of the equipment with a Univac 1100 in the near future. The installation location of the new system has tentatively been designated as Building 1.

VI. CONCLUSIONS

A. IDA DEVELOPMENT

The development of Project IDA contains many strong parallels to a DOD major weapon system acquisition. IDA was officially formulated in a "needs statement", namely the Navy's Financial Management Improvement Program. It subsequently progressed through conceptualization which is represented by the first Integrated Accounting System General Design Manual. Detailed design took an extended period of time and at each major decision point the project was altered somewhat by changing needs and technology. Prototype development was selected and seems to have worked well. Full scale production and deployment equates with the major installation and implementation efforts which should culminate in mid FY81 with the operation of the FIPS network. Finally, the eventual inclusion of Navy Industrial Fund (NIF), Navy Stock Fund (NSF) and overseas accounting into IDA will signify the modification and expansion phase of a weapon system development.

IDA and weapon acquisition both involve a large number of people, dollars and hours of effort in careful cultivation of a concept. They are both characterized by in-house political power plays and the continual compromise of positions. The time delays involved between a needs statement formulation and operational deployment of the system are comparable and both have as a general goal the improved effectiveness of a

pre-existing organization. Perhaps because of these similarities, major system developments such as IDA could benefit from an application of documented procurement precepts and guidelines. This is mentioned not as a criticism, but merely as a possible management approach to a complex task such as IDA.

One of the primary objectives of IDA is the elimination of activity memorandum accounts and the corresponding clerical labor that they require. While this may be possible in the long term after the quality and reliability of IDA have been firmly established, it would seem that in the short run only a reduction of effort on memorandum accounts might be realized. This is primarily a reflection of the desire of Navy personnel who are authorized to commit, obligate and expend government funds to avoid possible criminal prosecution resulting from an over-obligation or over-expenditure caused by an accounting error. This motivation is understandable and desirable, indeed, it has been the foundation for fiscal responsibility and accountability in the public sector for over a century. It is possible that, in the interim, memorandum accounts might be replaced by frequent computer account balance and transaction summary reports supported by a manually recorded activity transaction journal. To expect an elimination of memorandum accounts seems quite lofty; a substantial reduction is much more likely.

Major gains in the reconciliation process can and will be attained by IDA. The use of a common data base for accounting and disbursing should eliminate entirely the costly process of

attempting to align the current cash and cost reporting systems. Monthly reconciliation of activity records and FIPC/FAADC reports will still occur but on a much reduced level of effort. This action will be necessary to ensure that all transactions have been processed once and only once.

The ability of most activities to inquiry a data base and request standard reports at any time may result in several undesirable impacts on the system. It is conceivable that some, if not many activity level financial managers will direct their staffs to assemble daily comprehensive financial reports. This will be accomplished fairly easily via remote terminal and in many cases reports will be religiously filed away for possible future reference. The attitude of "Its available, let's make use of it" is fine, if the output is in fact used. However, in many cases reports will be requested as part of the daily routine, they probably will not be used, and the result will be excessive mainframe, remote terminal and paper usage along with the costs of filing and storing reports. At the end of reporting periods, quarters and the fiscal year, fund administrators will be concerned about fully obligating but not over obligating funds. Frequent terminal inquiries may result from an attempt to identify newly posted transactions, the timing of which may not be directly controllable by the administrator. This type of action may severely overload telecommunication lines and increase response times for all users. Without a strict monitoring program to detect

excessive usage or a cost sharing plan which would "charge" the activity for output, the system presents a high potential for abuse.

The original 1972 IDA cost benefit study and the General Design Manual both specify that remote terminal assignment was based on activity transaction volume. This type of approach acknowledges the acquisition and maintenance cost of terminals and telecommunications lines and attempts to equate a lack of cost avoidance to be realized by terminal assignment with the cost of delayed or inaccurate end of period reports. For example, terminal assignment in some activities is based on personnel cost savings alone; in other activities where personnel cost savings cannot be identified, terminals were not assigned. The latter type of activities will continue to rely on the U.S. Postal System for source document and invoice delivery to the FIPC/FAADC which services them. At the end of the reporting period there will be a finite number of transactions within the activity or in transit that should properly be included in the period's reports. A choice must be made to either process reports without outstanding transactions at the end of the period or to delay processing for the four to six days required to mail and input remaining transactions. Hence, reports from the FIPC must either be delayed or be inaccurate. If reports are to be delayed, is the delay worth the cost of terminal assignment? If the reports are to be inaccurate, how much inaccuracy can be tolerated? Is transaction volume a valid criteria for terminal assignment or is dollar value of

transactions a more appropriate measure? In light of recent escalating personnel costs and decreasing hardware costs, does a terminal assignment policy based on a 1972 cost benefit analysis accurately indicate a desired policy for 1978-1981 implementation? These questions need to be reexamined.

The computer installation providing IDA processing support for FAADCPAC and NSC are both located in Building 1, yet are operated by two separate commands. On the surface this appears to be inefficient and warrants further study.

It must be acknowledged that any establishment of a centralized data processing center carries with it certain advantages and disadvantages to the customer activity. Perhaps the primary advantage is the lower processing costs realized by commands which do not require a full-time dedicated installation to handle all of their processing. Among the disadvantages is the necessity for prioritizing work between the several customer activities involved and the associated loss of direct managerial control over processing center operations. However, at the present time within Building 1, there exists at least two separate and independent computer installations. One system is owned by the NSC and the other will be owned on 1 October 1978 by NARDAC. Plans for both systems call for extensive modification and expansion within the next 12 to 24 months.

Ownership and control of data processing resources within the Navy is currently embroiled in a high-level political power struggle, the outcome of which is not clear. It does, however,

cause one to pause and consider whether two separate computer installations within the same building are truly necessary to the missions of the organizations involved. Is it not possible to organize a regional service center in a manner that encourages and indeed motivates it to provide timely quality service to its customers? Surely there must be some way to minimize the disadvantages of a central processing center in order that the advantages may be exploited.

Within a larger and much broader context, IDA may be viewed as one of the initial steps in the final development of a master Navy financial management information system. Naval Education and Training Financial Management Information System (NETFMIS) represents a quantum improvement in the information system concept when compared to the strictly accounting aspects of UADPS. Improvements and expansions to NETFMIS are in the development phase at present and offer the potential for a totally integrated comptroller management device. To the extent that any future Navy-wide financial management information system can provide timely, accurate, and complete processing in a standardized format which is flexible enough to meet the needs of various types of user activities, its design and development should be expedited. To the extent if fails to satisfy or it compromises any of these criterion, its implementation should be viewed with a healthy dose of scepticism.

B. IDA IMPLEMENTATION

There appear to be several managerial concepts or guidelines that have particular applicability to implementation of a system as extensive as IDA. Adherence to and utilization of these guidelines provide no guarantee of success but they do significantly enhance the probability of it.

Positions of leadership must be well defined and assigned to individuals who possess the proven ability to staff, plan, direct and control the resources assigned for their use. These individuals must be given authority commeasurate with their responsibility. They need a clear and unbroken line of communication with superiors and they should be encouraged to use it whenever needed. They should not be burdened with unnecessary collateral duties. They must be able to view things as a generalist and be willing to investigate and listen to specifics. Selection of any given individual should, if possible, reflect a position of neutrality and independence when competing interests are involved.

Committees should be examined for size, structure and purpose. Limited or excessive size can adversely impact the ability of a group to define or analyze the issues. Similarity among members can limit creative output but significant differences may provide for an uncooperative atmosphere unless handled properly. The mission of the committee must be tangible, attainable, and well defined. Actual committee work must be preceded by a thorough understanding and acceptance of the mission by all members. This may take quite some time

initially, but the committees final output is almost invariably a better product and quite frequently the total time required to completion is less.

A formal and realistic implementation plan must be developed and adopted. It should include a detailed task level statement of actions, designate assigned individuals and specify completion dates. If the initiation of a number of tasks require as a prerequisite a task completion in other areas, then the entire plan should be examined using a critical path or other similar technique. This will help to identify task interdependencies and areas where slippage may be intolerable. A formal feedback system should be adopted to notify committee members and leadership of task status. Reports on stumbling blocks encountered should be submitted on a frequent basis so that additional effort may be assigned to those tasks which require it.

Where outside guidance and expertise are available, it should be capitalized on to the greatest extent possible. The ability to learn from other's mistakes is a valuable attribute which can reduce the time and resources required to complete the implementation process.

Finally, but perhaps most importantly, all personnel affected by the new system or procedure must be provided with overall design system objectives and necessary retraining. Even the best designed systems and implementation plans can be expected to fail miserably if personnel at the operating level do not understand and support it. Mediocre systems which do

have the full support of operating personnel have, on many occasions, produced superior results. This communication and education should go well beyond a simple position retraining program. Information on job rotations, regradings and elimination should be passed on as soon as practicable. This will tend to dispel damaging and disruptive rumors.

While implementation of a system as extensive and complex as IDA is never routine or easy, it need not be approached on a trial and error basis either. Sound managerial techniques are available for use in these areas and it is incumbent upon high level management to practice them and encourage their application throughout the organization.

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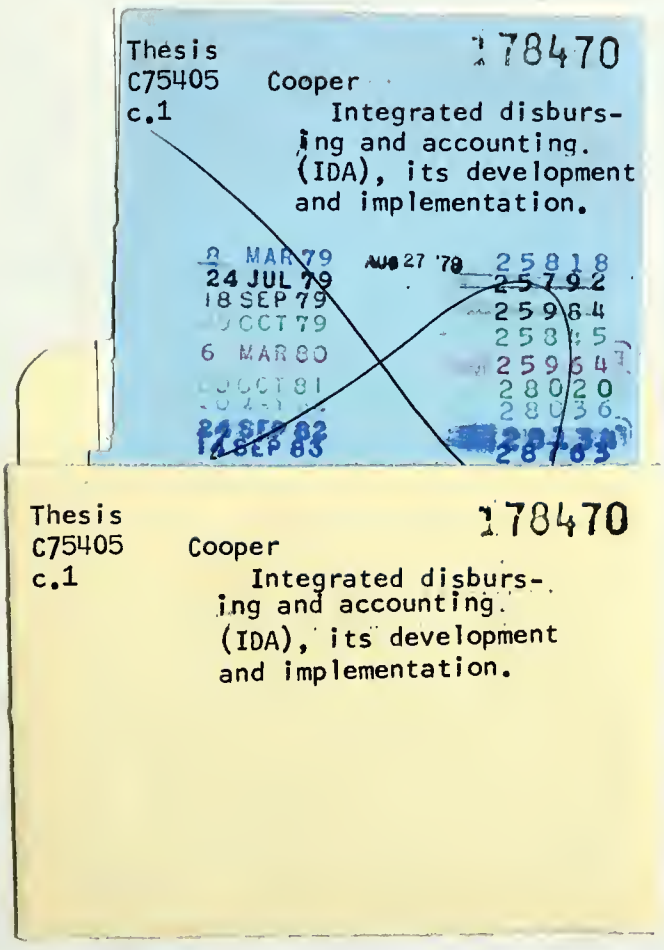

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